



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,119	01/14/2002	Shu-Hui Tsai	BHT-3129-66	6867

7590 03/03/2003

BRUCE H. TROXELL
SUITE 1404
5205 LEESBURG PIKE
FALLS CHURCH, VA 22041

EXAMINER

DOUGHERTY, THOMAS M

ART UNIT PAPER NUMBER

2834

DATE MAILED: 03/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/043,119

Applicant(s)

TSAI ET AL.

Examiner

Thomas M. Dougherty

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-14 is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is no proper antecedent basis for citation of "the upper electrode" in either claim 3 or 4. Note that as these claims are indefinite, a consideration of their relationship to the prior art cannot be adequately made at this time, when they are made definite such consideration may be made.

Claim 5 presents confusing language: "input ports that can be connected with outward" is the indefinite language here. Claim 6 notes that the "signals from the antenna can be controlled by the micro-electro-mechanical switches" which is not understood. Claim 7 uses similar language regarding the ability of a switch to control a signal. Claim 7 also notes use of "the transmitting terminal" which has no proper antecedent basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1 and 2 are rejected under 35 U.S.C. 102(a) as being anticipated by Xu (WO 02/19459). Xu shows (fig. 3) a filter controlled by micro-electro-mechanical switches, it comprises: a substrate (page 2, line 1); a wave-filtering device (300) disposed on the substrate; an input port (306) disposed on one side of the wave-filtering device (300); an output port (312) disposed on another side of the wave-filtering device (300); and micro-electromechanical switches (304, 308) disposed on the wave-filtering device. Note that Xu shows the claimed structural features of the invention; it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

The electro-mechanical switches (304, 308) can be drive[d] by any actuating methods, such as: electrostatic driving, thermal-electrical driving, piezoelectric driving, etc.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 and 5-11, as some of these claims are best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu (WO 02/19459) in view of Nguyen (US 6,424,074). Given the invention of Xu as noted above, he does not show

an antenna or an output/input port connected with the antenna wherein the signals from the antenna can be controlled by the micro-electro-mechanical switches to enter the receiving input ports or wherein the signals from the input ports can be controlled by the micro-electro-mechanical switches to enter the transmitting terminal, and then the signals are transmitted by the antenna.

Nguyen shows (fig. 6) a filter controlled by micro-electro-mechanical switches, it comprises: a substrate (col. 8, lines 65 and 66); a wave-filtering device disposed on the substrate; an input port (20) disposed on one side of the wave-filtering device; an output port (24) disposed on another side of the wave-filtering device. Nguyen further shows micro-electromechanical switches (associated with his micromechanical RF channel selector) disposed on the wave-filtering device.

The electro-mechanical switches can be drive[d] by any actuating methods, such as: electrostatic driving, thermal-electrical driving, piezoelectric driving, etc.

Nguyen shows an antenna; an output/input port connected with the antenna wherein the signals from the antenna can be controlled by the micro-electro-mechanical switches to enter the receiving input ports or wherein the signals from the input ports can be controlled by the micro-electro-mechanical switches to enter the transmitting terminal (note that the micromechanical filter is a transmitting/receiving device), and then the signals are transmitted by the antenna.

As noted, Nguyen's filter device comprises: output/input ports (each connected to a specific filter); micro-electro-mechanical switches (also each connected to a specific

filter and located between each filter and the antenna); and output ports (24), note that each specific filter has an output port.

The signals are inputted from the output/input ports, then, under the control of the micro-electro-mechanical switches, the signals are wave-filtered and outputted. Note that as Nguyen shows the claimed structure, he is regarded as inherently meeting the Applicant's claimed goal of the invention: that of achieving wave-filtering multiplexing.

The wave-filtering devices controlled respectively by the micro-electro-mechanical switches can be various channels with same frequency.

Allowable Subject Matter

Claims 12-14 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art fails to show or fairly suggest an upper and lower substrate with micro-electro-mechanical switches and driving circuits formed on the upper substrate and wave-filtering units and connecting circuits formed on the lower substrate with the substrates connected together..

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Direct inquiry concerning this action to Examiner Dougherty at (703) 308-1628.

Application/Control Number: 10/043,119
Art Unit: 2834

Page 6

ind
tmd

February 25, 2003

Thomas M. Dougherty

THOMAS M. DOUGHERTY
PRIMARY EXAMINER
GROUP 2800

2800